9-9-1983

Outlook for the Proposed Undersea World

Harrison Price Company

HARRISON PRICE COMPANY

September 9, 1993

Mr. Brian Kearney
Community & Economic Development Department
City of Phoenix
1 North 1st Street, Suite 700
Phoenix, AZ 85004

Dear Brian:

Enclosed are 10 copies of our letter report concerning the outlook for the proposed Undersea World attraction in downtown Phoenix. As you will note, the project is feasible if it can be developed to the envisioned standards within the revised financial guidelines we have outlined, and could be an attractive addition to the entertainment core that is emerging in the downtown area. Please feel free to call if you have any questions after reviewing our findings. The various reports you loaned for my use in the analysis are being returned to you under separate cover and you should receive them shortly.

It was a pleasure to work with you on this assignment. We appreciate the opportunity to work with the City of Phoenix and will be happy to provide further assistance on the Undersea World project as appropriate.

Best regards,

Sharon J. Dalrymple

Sharon J. Dalrymple
Vice President

Encls.

cc: Harrison Price

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THE OUTLOOK FOR THE PROPOSED UNDERSEA WORLD
Phoenix, Arizona

Prepared for

The City of Phoenix
September 1993

Prepared by

HARRISON PRICE COMPANY
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September 9, 1993

Mr. Brian Kearney
Community & Economic Development Department
City of Phoenix
1 North 1st Street, Suite 700
Phoenix, AZ 85004

Dear Mr. Kearney:

In response to your request, Harrison Price Company has evaluated the proposal to develop a commercial aquarium attraction known as Undersea World in downtown Phoenix. Our analysis is based on a review of the feasibility study for the project prepared by Leisure and Recreation Concepts, Inc. ("Feasibility Analysis of an Undersea World in Valley of the Sun, Arizona," revised June 3, 1993), together with other materials on the characteristics of the Phoenix market supplied by your office and our own file data relative to the performance of other aquariums throughout the United States. This letter report presents our findings.

Concept and Site Description

A Scottsdale-based company known as Oceanic Adventures, Inc. has proposed the development of Undersea World, a 45,000- to 50,000-square-foot walk-through aquarium, for a site in downtown Phoenix, Arizona. Modeled on similar facilities recently developed in New Zealand, Australia, and Singapore and also akin to the "Shark Encounter" exhibits at the Sea World parks in this country, the central feature of the attraction would be a huge linear tank of approximately 700,000 gallons of water surrounding a seamless transparent tunnel. Within the tunnel, a moving walkway would transport visitors through the tank to view a colorful variety of marine life swimming overhead and on both sides, the effect being to give visitors the perspective of a scuba diver. Ancillary facilities would include an audio-visual theater, a touch pool, and freshwater aquarium exhibits, plus a restaurant and gift shop. As yet, no free-standing counterpart of this aquarium concept exists in the United States; however, two attractions of this type are scheduled for opening in 1995--one at the Pier 39 festival retail center in San Francisco and another at the Mall of America in Minneapolis.

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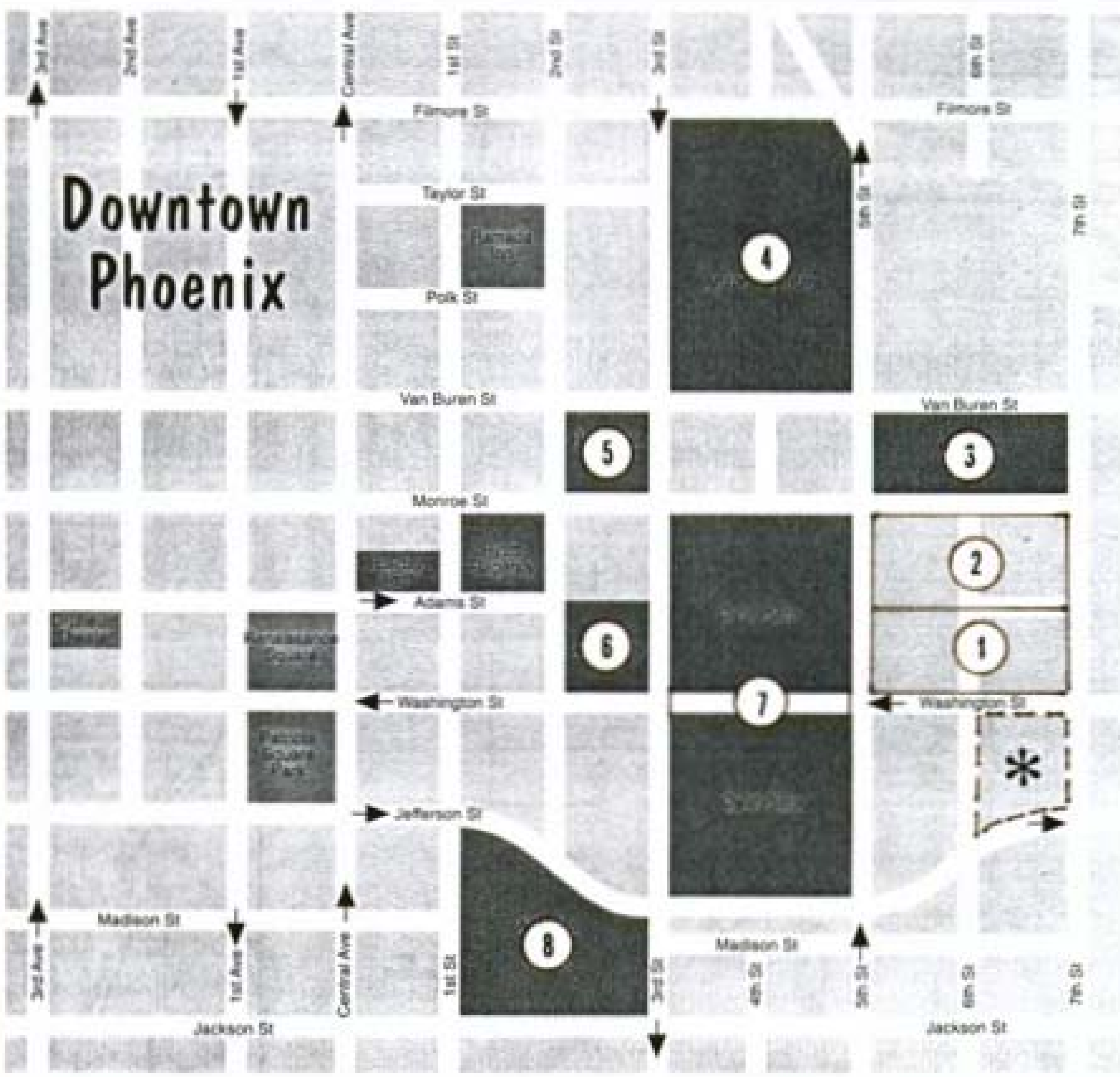
While it has much in common with major new aquariums, the Undersea World concept is not directly comparable since these other facilities are much larger (up to 210,000 square feet of building area) and involve capital investments of as much as $70 million. Owing to this important difference, the subject concept is not intended as a stand-alone attraction--in terms of investment level and the scope of the entertainment value offered, it lacks the "critical mass" necessary to have a substantial impact as an independent destination. Average visitor stay time is generally short at one to one and one-half hours, which compares to the two or three hours characteristic of major conventional aquariums. On the other hand, the concept is well suited for location within a larger destination complex containing other recreation facilities, where it serves as a specialty, complementary attraction that can add measurably to the synergism of the overall entertainment offering.

Siting is accordingly critical. HPC understands that the developers propose to lease a 75,000-square-foot, city-owned property in central Phoenix, located between Washington and Jefferson Streets and between 6th and 7th Streets, as shown on the accompanying **Site Orientation Map**. This choice is excellent as it is within a few blocks of several important complementary attractions, including the new quarters of the Arizona Museum of Science & Technology and the Phoenix Museum of History immediately to the north (which are presently under development) and the Civic Plaza Convention Center two blocks west. Not far away are the Mercado and Arizona Center mixed-use developments, which include a sizable amount of retail and restaurant space. Symphony Hall, the Herberger Theater, and the America West Arena are also within convenient walking distance.

Capital Investment

Exclusive of parking, Leisure and Recreation Concepts (LARC) estimates the total capital investment in Undersea World at $13.3 million, or about $300 per square foot of building area assuming 45,000 gross square feet. No documentation was provided as to the basis of this estimate which, it should be noted, had no formal design or architectural input. As one point of comparison, costs at recently opened conventional aquariums (including parking) amounted to $45 million, or $350 per square foot, at the Tennessee State Aquarium in Chattanooga (which is entirely a freshwater presentation), $52 million, or $435 per square foot, at the New Jersey State Aquarium, and $67 million,



*	Proposed Underwater World Site	4	Arizona Center Office/Retail/ Hotel Complex
1	Arizona Museum of Science & Technology	5	Herberger Theater
2	Phoenix Museum of History	6	Phoenix Symphony Hall
3	Mercado Office/Retail Complex	7	Civic Plaza Convention Center
		8	America West Arena

SITE ORIENTATION MAP FOR THE PROPOSED UNDERWATER WORLD AQUARIUM

or $610 per square foot, at the Aquarium of the Americas in New Orleans. Given the nature of the Undersea World concept, which is technologically less elaborate than major conventional aquariums and does not involve the costly life support systems necessary for marine mammals, $13 million may be a plausible preliminary estimate. HPC notes, however, that the LARC estimate incorporated only a modest 4 percent contingency allowance. A 10 to 15 percent contingency would be more prudent in order to ensure an outstanding presentation. A total development budget more on the order of $14 to $15 million (in 1993 dollars) for the basic attraction thus appears more realistic and will increase with inclusion of parking.

Available Market and Projected Attendance

Leisure and Recreation Concepts (LARC) defined a regional resident market for Undersea World extending up to 150 miles from downtown Phoenix, together with a tourist market comprised of visitors to Maricopa County as estimated by the Phoenix Convention and Visitors Bureau. Current and projected market size is summarized below:

	Market Size (thousands)		
	1992	1994	1996
Resident			
0-50 Miles	2,299	2,415	2,537
50-100 Miles	326	343	360
100-150 Miles	719	748	778
Subtotal	3,344	3,506	3,676
Tourist	10,940	12,061	13,297
Total	14,284	15,567	16,973

Source: Leisure and Recreation Concepts, Inc.

Aggregate market size is estimated at some 14.3 million currently and will grow to approximately 17 million by 1996, as indicated, with more than three-fourths of the total market accounted for by tourism. The availability of a large tourist base will be crucial to the success of Undersea World--given the size of the subject site, there is little potential for expansion or significant change in the program over time, denoting a low repeat visit incentive for the local resident market and, as a consequence, a high dependence on tourism, which provides a continual influx of new, first-time visitors. According to the LARC report, tourism in Phoenix has been growing at the rate of 5 percent annually since the mid-1980s (although no confirming documentation was furnished), and the report assumes this rate will be sustained. The scope of the HPC assignment did not encompass an independent derivation of the current volume of Phoenix tourism nor an examination of trends over time. However, a continued 5 percent annual rate of gain on so large a base seems optimistic for a number of reasons, including the uncertainty of economic conditions affecting travel in the years ahead and intensifying competition for the travel dollar. A healthy growth rate--perhaps on the order of 2 to 3 percent per year based on experience in other flourishing destinations--can probably be expected due to the appeal of climate and the growing inventory of visitor attractions and other infrastructure. Assuming the present base of 10.9 million is a valid estimate, the visitor market may therefore expand to roughly 12 million by 1996. Combined resident and tourist market support in that year would thus amount to 15.7 million, or about 10 percent less than the LARC projection.

LARC estimates gross initial penetration of the aggregate resident and tourist market at 5 to 7 percent, as shown in the following table:

	Market Capture Rate		
	Low	Probable	High
Resident			
0-50 Miles	13.0%	15.0%	17.0%
50-100 Miles	6.0	7.0	8.0
100-150 Miles	2.0	2.5	3.0
Tourist	4.0	4.5	5.0
Total	5.4%	6.2%	6.9%

Source: Leisure and Recreation Concepts, Inc.

Applied to market size in 1994 (the assumed first year of operation in the LARC analysis), these capture rates translate into an initial attendance volume of between 770,000 and 985,000 visitors; the mid-range, or probable, forecast calls for some 878,000 visitors. Thereafter, attendance is projected to continue to grow, but at a declining rate, reaching some 959,000 in the third year of operation and slightly more than 1 million by the fifth year. The LARC report does not provide a context for estimated capture rates. In **Table 1**, HPC has highlighted the experience of a number of major existing aquariums, including several conventional aquariums in the U.S. and two Undersea World-style aquariums in Australia. Among U.S. facilities, gross market capture varies from a low of 5 percent at the older and comparatively small Mystic Marineland Aquarium to a phenomenal 20 percent at the outstanding Monterey Bay Aquarium. The indicated capture rate for the Sydney Aquarium is 8 percent, while a similar attraction on Queensland's Sunshine Coast achieves an estimated 6 percent overall market capture.

Table 1

**MARKET CAPTURE RATES OF MAJOR AQUARIUMS
IN THE UNITED STATES
1991-92**

Aquarium	Annual Attendance (millions)	Market Size (millions) Resident 1/	Tourist	Total	Gross Market Capture Rate 2/
Conventional Aquariums					
Monterey Bay Aquarium (Monterey, CA)	1.8	6.8	2.0	8.8	20%
Aquarium of the Americas (New Orleans, LA)	1.9	3.1	7.0	10.1	19
Shedd Aquarium (Chicago, IL)	2.2	11.8	11.0	22.8	10
National Aquarium (Baltimore, MD)	1.5	16.6	5.0	21.6	7
New England Aquarium (Boston, MA)	1.3	9.9	8.0	17.9	7
New Jersey State Aquarium (Camden, NJ)	1.2	14.7	5.5	20.2	6
Mystic Marineland Aquarium (Mystic, CT)	0.7	11.6	2.0	13.6	5
Undersea World-Style Aquariums					
Sydney Aquarium (Sydney, NSW, Australia)	1.0	5.9	6.2	12.1	8
Underwater World (Mooloolaba, QLD, Australia)	0.4	3.0	3.5	6.5	6

1/ Resident population within approximately 100 miles.
2/ Total annual attendance divided by total market size.

Source: Harrison Price Company.

A range of 5 to 7 percent market penetration for the Phoenix facility appears reasonable and consistent with comparable experience in Australia as well as the lower end of the range for U.S. attractions. Allowing, however, that total market size may be somewhat less than projected in the LARC report, absolute attendance volume as an upside target may be more in the neighborhood of 850,000 at stabilization (typically, the third year of operation). Attendance in the first two years will likely exceed this figure given publicity surrounding the opening, the novelty of the attraction in the marketplace, and a heavy response among local residents who will see it for the first time. Achievement of an attendance volume of this magnitude presumes a superior marine life presentation and an aggressive marketing effort. For anything less, expectations should be lowered to perhaps half that volume.

After stabilization, attendance is not likely to grow measurably barring a major expansion that would induce repeat visitation. To illustrate, **Table 2** presents the attendance history for three major aquariums developed since 1980. As shown, first-year attendance in Baltimore and Monterey ran 15 to 25 percent higher than in the second year, with continued erosion into the third year and a leveling off thereafter. The newer New Orleans facility is following the same pattern. It is also noteworthy that a qualitative change accompanies the typical attendance progression--local residents predominate in the early years, whereas tourists provide the bulk of support in later years, at least until a major refurbishment or expansion takes place that provides fresh motivation for the local market. For example, it can be seen that a modest upswing in visitation occurred when Baltimore added its new marine mammal pavilion in 1991--an increase that would probably have been much greater had the timing not coincided with the national recession and a downturn in area tourism (which offset the gain in resident patronage).

Physical Capacity Guidelines

Planning criteria in the LARC report for Undersea World call for a peak attendance month of 12 percent, a "design day" (average high day) equivalent to 24 percent of average weekly attendance during the peak month, and an on-site crowd factor (the average maximum number of people in the aquarium at the highest attendance hour) of 16 percent. The first two of the latter factors are in keeping with typical experience, while the on-site factor implies an average visitor length of stay of between one and

Table 2

ATTENDANCE HISTORY FOR SELECTED MAJOR AQUARIUMS

	Total Attendance (thousands)		
Year	National Aquarium (Baltimore) 1/	Monterey Bay Aquarium (Monterey) 2/	Aquarium of the Americas (New Orleans) 3/
1981	1,596	...	...
1982	1,366	...	...
1983	1,200	...	...
1984	1,200	445	...
1985	1,268	2,227	...
1986	1,393	1,706	...
1987	1,421	1,698	...
1988	1,446	1,716	...
1989	1,496	1,707	...
1990	1,477	1,765	832
1991	1,536	1,767	1,902
1992	1,546	1,760	1,712
1993P	1,600	1,800	1,500

P means projected.
1/ Opened August 1981; data are for fiscal years beginning 1981-82.
2/ Opened October 1984.
3/ Opened September 1990.

Source: Harrison Price Company.

one-half hours over a 12-hour daily operating schedule. It also implies a high turnover rate; if visitor stay time approaches the upper limit, considerable queuing is inevitable during peak attendance periods. Based on these expected attendance patterns and a typical aquarium allowance of 40 to 50 gross square feet of building area per on-site guest, the proposed 45,000- to 50,000-square-foot size of the facility is adequate to handle the estimated volume of patronage, as demonstrated in the calculation below:

> 850,000 annual attendance x 12% peak month = 102,000 persons
> 102,000 peak month ÷ 4.43 weeks = 23,025 persons per peak week
> 23,025 peak week x 24% design day = 5,525 persons per peak day
> 5,525 peak day x 16% on-site = 885 persons peak on-site
> 885 peak on-site x 45 gross sf per person = 40,000 required square feet

As indicated, 40,000 square feet will be required to accommodate annual visitation of 850,000. Working backwards through the above calculation, a building of 45,000 square feet would have a theoretical capacity of 960,000 visitors per year, while a 50,000-square-foot facility could accommodate about 1.1 million visitors annually.

Admission Price and Net Admissions Revenue

The LARC report specifies opening-year admission prices of $8.95 adult and $6.95 child, with steady increases in successive years leading to an adult price of $11.95 and a child price of $9.95 in the fifth year. This compares with a range of $7.00 to $11.50 adult and $3.50 to $6.75 child for major existing aquariums in the United States, as shown in **Table 3**. An adult ticket of $8.95 is commensurate with a high-quality presentation and should be attainable in the Phoenix market. Over time, however, it will be difficult to justify real-dollar price increases without a substantial expansion of the facility and entertainment program. On the basis of a cost-of-doing-business increase averaging 3 percent per year, it is reasonable to anticipate an adult ticket of about $10.00 by the fifth year.

The LARC report further estimates effective per capita admissions revenue--after allowances for attendance mix between adults and children and promotional discounts--of $7.60 in the initial year, which is equivalent to a yield of 85 percent on the adult ticket ($7.60 ÷ $8.95 = 85%). A yield of this magnitude is considerably more than commonly achieved at existing aquariums, as indicated in **Table 4**, where the range is currently 49

Table 3

ADMISSION PRICE SCHEDULE AT MAJOR AQUARIUMS IN THE UNITED STATES 1993

Aquarium	Admission Price: Adult	Admission Price: Child (Age Range)	Admission Price: Senior Citizen
National Aquarium (Baltimore, MD)	$11.50	$6.75 (3-11)	$8.75
Monterey Bay Aquarium (Monterey, CA)	9.75	4.50 (3-12)	7.25
Tennessee State Aquarium (Chattanooga, TN)	8.75	4.75 (3-11)	8.75
New Jersey State Aquarium (Camden, NJ)	8.50	5.50 (3-11)	7.00
Aquarium of the Americas (New Orleans, LA)	8.00	4.25 (3-11)	6.25
New England Aquarium (Boston, MA)	7.50	3.50 (3-15)	6.50
Texas State Aquarium (Corpus Christi, TX)	7.00	3.75 (4-17)	5.00
Shedd Aquarium (Chicago, IL)			
Aquarium Only	3.00	2.00 (3-11)	2.00
Aquarium/Oceanarium Combination	7.00	5.00 (3-11)	5.00

Source: Harrison Price Company.

Table 4

YIELD ON ADULT TICKET PRICE AT SELECTED MAJOR AQUARIUMS 1991

Aquarium	Per Capita Admissions Revenue 1/	1991 Adult Ticket Price	Effective Yield on Adult Ticket 2/
Aquarium of the Americas (New Orleans, LA)	$5.36	$8.00	67%
New England Aquarium (Boston, MA)	4.52	7.50	60
Monterey Bay Aquarium (Monterey, CA)	5.80	9.75	59
National Aquarium (Baltimore, MD)	5.65	11.50	49

1/ Includes general admission, shows, and other attractions requiring tickets.
2/ Per capita admissions revenue divided by adult ticket price.

Source: Harrison Price Company.

to 67 percent. It is recognized that as nonprofit enterprises, existing aquariums have a generous policy of free admissions (especially for school groups and members of the aquarium society) and also discount heavily to encourage frequent visitation. Of greater relevance to this analysis is the 70 to 75 percent yield characteristic of major commercial attractions, including the Sea World marine parks. For planning purposes, HPC considers a yield factor of no more than 72 percent to be realistic for Undersea World, which will necessarily have to generate substantial support from schools as well as tourist and convention groups in order to meet attendance objectives. On this basis, a gross adult ticket of $8.95 would yield $6.44 in effective per capita admissions revenue.

Visitor Spending on Food, Merchandise, and Miscellaneous

Food and beverage spending at Undersea World is projected in the LARC report at $2.75 per capita initially, growing to $3.34 by the fifth year of operation. Corresponding estimates for merchandise spending are $2.80 and $3.81 per capita, respectively. Again, no framework in the way of comparable experience was provided for these estimates. HPC understands that plans call for a full-service restaurant at the site in the mold of the Monterey Bay Aquarium or Shedd Aquarium's new oceanarium wing. The advisability of a restaurant is questionable in the context of a short average visitor stay time, although it may be supportable--pending analysis of the restaurant market in downtown Phoenix--if open to the general public as well as aquarium visitors (as is the case in Monterey and Chicago). Even under very optimistic assumptions, however, per capita spending on food is not likely to approach $2.00 or $3.00. As one point of reference, the New Orleans aquarium is reporting a per capita expenditure of roughly 60 cents on food. With an outstanding restaurant and an effort to develop a clientele not dependent on aquarium patronage, a per capita expenditure of $1.00 may be achievable--the high end of the range as exemplified by Monterey.

Turning to merchandise spending, the Monterey Aquarium is again in the vanguard, reporting slightly less than $4.00 per capita. New Orleans and Baltimore achieve $1.17 and $1.10 per capita, respectively. The key to Monterey's success is its offering of high-quality merchandise--primarily books, marine-themed art goods, and moderately priced souvenirs, with a conspicuous downplaying of inexpensive trinkets. Moreover, visitors are genuinely inspired by the aquarium presentation in this instance, which greatly increases propensity to purchase a lasting memento of the occasion. Assuming a merchandise offering of similar quality at Undersea World but simultaneously taking into account the more limited aquarium experience, a per capita expenditure of $2.50 may be achievable.

Miscellaneous expenditures at Undersea World are estimated in the LARC report at 12 cents in the first year and increase to 16 cents in the fifth year. These figures appear reasonable and conservative.

Cost of Goods Sold

The LARC report specifies the cost of goods sold at 30 percent of food and beverage sales and 43 percent of merchandise sales. In the context of commercial recreation attractions, these ratios compare to a range of 27 to 54 percent on food (with a weighted average of 35 percent) and 37 to 59 percent on merchandise (where the weighted average is 48 percent). As mid-range planning factors, HPC suggests using the weighted averages, or 35 percent on food and 48 percent on merchandise. The cost of goods is in effect the inverse of the retail markup--a gift item supplied to the aquarium at $1.00, for example, has a 100 percent markup if sold at $2.00, while the cost of goods ratio is 50 percent. A lower, 43 percent cost of goods ratio accordingly implies a higher markup (133 percent in this example). Generally speaking, the higher the quality of the product and hence cost to the retailer, the lower its markup given recognizable limits on the amount consumers are willing to spend. Since HPC's suggested per capita spending targets are contingent on a reasonably high level of food and merchandise quality, it follows that cost of goods ratios higher than those assumed by LARC should be used in planning for the attraction.

Operating Expenses

Operating expenses for Undersea World other than the cost of goods sold are projected in the LARC report at a total of $4.4 million in the first year and $5.4 million in the fifth year. Excluding the assumed annual land lease payment of $400,000 (a fee to be negotiated with the City of Phoenix and arbitrarily set in the report), operating expenses range from $4.0 million to $5.0 million over the planning period. When divided by total attendance of some 878,000 in the first year and 1 million in the fifth, indicated per capita operating expense comes to about $4.60 and $5.01 in these benchmark years, respectively. Overall operating expenses <u>including</u> the cost of goods sold amounts to

$6.63 per capita initially and $7.66 in five years. No data were provided in the LARC report as to expense ratios at comparable facilities. To establish a basic frame of reference, **Table 5** delineates the experience of several major existing aquariums. Figures shown include the cost of goods sold in all instances except New Orleans (where gift shops are operated by a concessionaire). It should be noted that to enhance comparability with the LARC report, HPC has adjusted operating budgets at the listed facilities to conform as closely as possible with the line items specified for Undersea World--major nonprofit aquariums, for example, typically incur sizable research and conservation expenses, a line item that does not apply to a commercial operation and has thus been excluded for purposes of this analysis. As shown, total per capita operating expense ranges from $7.62 per capita in Baltimore to $10.64 per capita in Monterey; the ratio at New Orleans is $5.15 with the omission of merchandise costs.

As a further test of the validity of the LARC assumptions on operating expense, HPC also reviewed allocations by line item and the indicated percentage distribution. Most allocations appear reasonable and in concert with typical aquarium experience, with due allowance for differences in plant size and program scope. The allocation for operating labor at Undersea World is equivalent to about 30 percent of total operating expense, lower than the 45 to 50 percent reported by other aquariums, but may be within reason given a limited educational and scientific staff and the absence of labor-intensive shows or animal behavior demonstrations. Of greater concern is the allocation for marketing and promotion--totaling $545,000 in the first year and $662,000 in the fifth, which is equivalent to only 4 to 5 percent of projected gross revenue. To achieve attendance goals, an allocation of at least 10 percent of gross revenue and possibly as much as 15 percent will be necessary. The LARC analysis also includes a contract management fee factored at 5 percent of total gross revenue. Holding the 5 percent factor constant, HPC's previously discussed reductions in total revenue will also reduce this cost item, thus partially offsetting the impact of a larger marketing budget.

On the basis of the foregoing considerations, HPC considers a total operating expense (including the cost of goods sold) of approximately $7.55 per capita to be a reasonable target at stabilization. This amount is roughly 15 percent lower than the recent average for major existing aquariums.

Table 5

PER CAPITA OPERATING EXPENSES AT SELECTED MAJOR AQUARIUMS
1991

Aquarium	Total Operating Budget (millions) 1/	Total Attendance (thousands)	Per Capita Operating Budget
Monterey Bay Aquarium (Monterey, CA)	$18. 8	1,767	$10.64
New England Aquarium (Boston, MA)	11. 4	1,311	8.70
Mystic Marineland Aquarium (Mystic, CT)	5. 8	744	7.73
National Aquarium (Baltimore, MD)	11. 7	1,536	7.62
Aquarium of the Americas (New Orleans, LA)	9. 8 2/	1,902	5.15

1/ As applicable, budgets adjusted to exclude land lease payments, depreciation, research expenditures, capital outlays, and any extraordinary expenses.

2/ Excludes cost of merchandise goods sold.

Source: Harrison Price Company.

Pro Forma Financial Analysis

A summary of HPC's preceding adjustments to Undersea World operating revenues and expenses, as compared to the original LARC estimates, is presented in **Table 6**. The analysis pertains to the third, or stabilized, year of operation. Total per capita revenue under the LARC model amounts to $15.39, whereas the lower visitor spending targets developed by HPC results in total revenue of $10.09 per capita. When applied to estimated annual attendance, total gross revenue amounts to some $14.8 million on the LARC model and about $8.6 million on the HPC model. Deducting the cost of food and merchandise goods sold, the LARC model shows net revenue of $12.5 million, while the HPC model shows $7.3 million. The LARC estimate of third-year operating expenses is $4.5 million, yielding net operating income, or EBDIT (earnings before depreciation, interest, and income taxes), of slightly more than $8 million before allowances for land lease payments and periodic reinvestments in facilities or programs. In contrast, the HPC model estimates operating expenses at $5.1 million, generating EBDIT of approximately $2.2 million, also before lease payments and reinvestment. Estimated EBDIT is equivalent to 54 percent of total gross revenue on the LARC model and 25 percent on the HPC model. The latter estimate is much more in keeping with the range of 20 to 31 percent (with a weighted average of 26 percent) reported by successful commercial recreation attractions.

EBDIT provides a basis for setting realistic benchmarks concerning the level of initial capital investment that the project can support. Employing three different capitalization rates for demonstration purposes, the table below shows supportable investment ranging from $14.3 million to $21.6 million on the HPC model:

Capitalization Rate	Supportable Investment (thousands)
10%	$21,590
12.5	17,272
15	14,393

Source: Harrison Price Company.

It was noted earlier that the initial capital cost of Undersea World may be on the order of $14 million to $15 million exclusive of parking. Assuming that Undersea World can be developed to the high standards implicit in attendance projections at a maximum cost of approximately $22 million, it can meet accepted economic feasibility criteria.

Table 6

COMPARATIVE PRO FORMA FINANCIAL ANALYSIS
FOR UNDERWATER WORLD
Year 3 (Assumed Point of Stabilization)

	LARC Feasibility Study	Harrison Price Company
Total Annual Attendance (thousands)	959	850
Estimated Per Capita Expenditures		
Admissions	$8.95	$6.44
Food and Beverage	3.03	1.00
Merchandise	3.27	2.50
Miscellaneous	0.14	0.15
Total	$15.39	$10.09
Total Gross Revenue (thousands)		
Admissions	$8,583	$5,474
Food and Beverage	2,906	850
Merchandise	3,136	2,125
Miscellaneous	134	128
Total	$14,759	$8,577
Less: Cost of Goods Sold (thousands)		
Food and Beverage	$872	$298
Merchandise	1,346	1,020
Total	$2,218	$1,318
Total Net Revenue (thousands)	$12,541	$7,259
Estimated Operating Expenses 1/ (thousands)	$4,513	$5,100
EBDIT 2/	$8,028	$2,159
EBDIT As Percent of Gross Revenue	54%	25%

Note: See text for assumptions.
1/ Excludes land lease payment.
2/ Earnings before depreciation, interest, and income taxes.

Source: Leisure and Recreation Concepts, Inc., "Feasibility Analysis of an Underwater World in Valley of the Sun, Arizona," revised June 3, 1993; and Harrison Price Company.

Breakeven Analysis

A final aspect of Undersea World performance of interest to the City to Phoenix is the breakeven point in attendance. The LARC analysis estimated fixed operating costs at 50 percent of total, which resulted in a breakeven attendance of about 253,000 visitors per year on the basis of very high revenue assumptions. Any attraction involving live animals has by nature a comparatively high fixed cost component--husbandry, life support systems, essential maintenance, and administrative overhead being the principal fixed expenses, and a fixed cost ratio of 50 percent appears realistic. For illustration purposes, **Table 7** shows breakeven attendance under alternative fixed cost assumptions of 40 percent, 50 percent, and 60 percent as applied to the HPC pro forma financial model. As indicated, Undersea World would break even at an annual attendance of between 413,000 and 498,000 visitors.

Please let us know if we can answer any questions or provide further elaboration of our findings regarding the potential of Undersea World.

Respectfully submitted,

Sharon J. Dalrymple

Sharon J. Dalrymple
Vice President

Harrison A. Price
Chairman

Table 7

BREAKEVEN ANALYSIS FOR THE PROPOSED UNDERWATER WORLD ATTRACTION
Year 3 (Assumed Point of Stabilization)

	Fixed Expense Ratio		
	At 40%	At 50%	At 60%
Total Per Capita Gross Revenue	$10.09	$10.09	$10.09
Total Per Capita Operating Expenses			
Cost of Goods Sold	$1.55	$1.55	$1.55
Other Operating Expenses			
Fixed	2.40	3.00	3.60
Variable	3.60	3.00	2.40
Total	$7.55	$7.55	$7.55
Total Per Capita Variable Expenses			
Cost of Goods Sold	$1.55	$1.55	$1.55
Other Operating Expenses	3.60	3.00	2.40
Total	$5.15	$4.55	$3.95
Incremental Per Capita Gross Revenue 1/	$4.94	$5.54	$6.14
Gross Fixed Expense (thousands) 2/	$2,040	$2,550	$3,060
Breakeven Attendance (thousands) 3/	413	460	498

1/ Per capita gross revenue less per capita total variable expense.
2/ Per capita fixed expense times 850,000 annual attendance.
3/ Total fixed expense divided by incremental per capita gross revenue.

Source: Harrison Price Company.